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AUTHOR Estes, Carmen A.
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ABSTRACT

Some of the problems encountered in nursing arise out of the multiplicity of preservice educational programs and the predominance of registered nurses (R.N.s) who are prepared below the baccalaureate degree level. To facilitate the efforts of nurses already in practice to earn a bachelor's degree, the Extended Degree Program in Nursing (ENURS) of the Pennsylvania State University was developed. Through a mobile system, computer-based courses are now available to ENURS students in Pennsylvania. Called Computer Managed Review and Examination (CMRE), it has evolved from a set of traditional paper-and-pencil "challenge exams" to a comprehensive, computer-managed, self-study and assessment program for each of seven basic Penn State nursing courses for which a registered nurse may accrue credit by examination. (Author/JY)

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THE USE OF COMPUTER BASED INSTRUCTION IN AN EXTENDED DEGREE PROGRAM FOR NURSES LEADING TO THE BACHELOR OF SCIENCE DEGREE[1]

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Carmen A. Estes
The Pennsylvania STate University

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Abstract

This paper describes the utilization of a mobile computer based instruction system in a baccalaureate degree program in Nursing. Some problems encountered by nursing arise out of the multiplicity of preservice educational programs and the predominance of registered nurses (R.N.s) prepared below the baccalaureate degree level. One approach to the education problem is to facilitate the efforts of nurses already in practice to earn a bachelor's degree. The Extended Degree Program in Nursing (ENURS) of The Pennsylvania State University is designed to do this. Through a mobile system, computer-based courses are now available to ENURS students in Pennsylvania. Computer Managed Review and Examination (CMRE) has evolved from a set of traditional paper-and-pencil "challenge exams" to a comprehensive, computer-managed, self-study and assessment program for each of seven basic Penn State nursing courses for which a registered nurse may accrue credit by examination. The system described here seems likely to be useful in other areas of the U.S. and to other health care workers as well.

Nursing Education

Mobile Education for Nurses in Remote Areas[2] is a research and development project for computer based instruction in nursing at The Pennsylvania State University. Appreciation of the nature of some

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IR 003 256

fundamental problems in nursing education that are being addressed in the project requires, first of all, awareness of the variety of educational routes to becoming a registered nurse, and secondly, an understanding of the expansion of the role of the registered nurse to well beyond traditional boundaries.

Contemporary Patterns

The term registered nurse (R.N.) is not an academic title, but a legal one that is granted to an individual by the licensing body of a particular state. Thus, the use of the phrase "R.N. degree" is clearly inappropriate. Licensure, it is true, is predicated upon certain educational credentials along with evidence of competence in nursing, but the range of preparatory programs currently providing these prerequisites is far wider than is commonly realized. There are, in general, three different basic or preservice preparation programs for registered nurses:

1. Diploma programs, variously called diploma schools or hospital schools, have been the traditional program for registered nurse preparation. These programs are, in the main, housed in and controlled by health service institutions such as acute care hospitals. They are thus under the aegis of nonacademic, non-degree-granting institutions rather than institutions of higher education. The graduates receive a diploma, but not an academic or professional degree. Graduates are eligible for state board licensure examination.

2. Baccalaureate degree programs, so-called "collegiate" programs, are offered by senior colleges or universities. While the programs utilize health care facilities including hospitals, program control is maintained by the educational institution. Graduates receive a baccalaureate degree and are eligible for the same state board examination as the diploma school graduates.
3. Associate degree programs, found in junior or community colleges, are terminal programs whose graduates receive an associate degree and are eligible for the same state board examination as the graduates of the other two programs. They, too, utilize health care facilities, but are controlled by the colleges not the service facilities.

The philosophy, objectives and curriculum of each type of program are quite different, and so each produces graduates that are quite different. Current trends in the proportional contribution of the different educational programs to the registered nurse pool is typified by data from Pennsylvania. Of those who graduated from nursing education programs during the year 1969-70, 93 percent were from diploma or associate degree programs, and 7 percent were from baccalaureate degree programs. By 1972-73, the proportion of registered nurse candidates prepared below the baccalaureate level had dropped 1 to 82 percent, while the

proportion prepared in baccalaureate degree programs fell from 51 to 41 percent. These data illustrate the current trend backward in terms of the proportion of students selecting the baccalaureate route. A lack of data on the educational background of the active registered nurse pool into which these baccalaureate degree graduates are being newly has made the impact of new graduates on the overall educational level of nursing is diluted. In 1972, the preparation of 51 percent of active registered nurses in Pennsylvania was within three the baccalaureate level. And Pennsylvania is essentially a microcosm of the national trends in nursing. In 1972, the proportion of employed registered nurses in the U. S. who were prepared at a less than the baccalaureate level remained at about 51 percent.

Preparation for Expanding Roles

The problem arising from this enduring patterning of activities of educational programs comes into focus when these is data are viewed vis-a-vis the health care needs of our society. The traditional concept of the "rights of Americans" has come to include "the right to health care." Along with this view has come a perception need to provide a more effective health care system than the sickness-oriented one that is proving inadequate for this health care in turn. The system that is emerging and that nursing is helping to shape requires practitioners of nursing prepared to function in roles substantially different from that of "custodian of the sick" to that of advocate, educator, counselor, manager of life, maintainer of function, and promoter of health.

[illegible] [illegible] [illegible] [

riculum. The beauty of CMRE is that there is built-in assurance that the knowledge base that the R.N. already possesses is, to the extent necessary, modified, enlarged, and fitted into this frame of reference. CMRE does this by combining sensitive and systematic measurement with a program of remedial instruction adapted to the needs of the individual registered nurse.

In addition to the CMRE courses which are basically designed for review, the project is undertaking development of computer based courses intended to present initial instruction in selected content areas rather than review and remediation. These courses range from CMI courses to full tutorial CAI programs. Courses in this category that are presently under development include:

NURS 390 - Advanced Pharmacological Concepts
NURS 410 - The Family in the Community
NURS 425 - School Health Nursing
ED PSY 400 - Introduction to Statistics in Educational Research

Wider Implications of Mobile Education

Although the initial target area for project efforts has been in Western Pennsylvania, the usefulness of the mobile computer instruction system in other areas seems obvious. First, Pennsylvania is representative of the current national needs and problems in nursing education. The shortage of academic-institution-based nursing preparatory facilities in non-urban areas is certainly not peculiar to Pennsylvania, nor is the predominance of registered nurses with preparation below the baccalaureate degree level. This system seems eminently suitable, than, for most any non-urban setting in the United States. Nor is usefulness

limited to rural areas. For example, CMRE is a powerful tool whether it is implemented on a sophisticated system at the main campus of a large university or on a mobile computer van parked in a remote corner of a rural county. At the same time that CMRE is being offered to ENURS students at Commonwealth Campuses, it is being offered in the Computer Assisted Instruction Laboratory at University Park as an alternative to the paper-and-pencil "challenge" exams.

With regard to consumers of project products, although initially designed to deliver instruction to ENURS students, adaptability of the courseware for use by other groups also seems obvious. The current consciousness in nursing of the essential nature of continuing education for practitioners of nursing suggests other groups to which mobile computer based instruction might be valuable. For example, the CMRE course Nursing Care of the Elderly has been modified for use as a review and self-evaluation tool for registered nurses preparing to take nursing practice certification examinations. The array of credit courses that has been developed contains a valuable pool from which content could be selected and repackaged to provide instruction in other content areas for nurses seeking noncredit continuing education. In addition there has already been an expression of interest by health care agencies in the use of the mobile system for inservice education for nursing service personnel. Indeed the use of the system to extend health education to patients

and clients in remote areas seems feasible. Throughout course development in this project, compatibility and adaptability to other systems has been considered.

In summary, a mobile computer based instruction system provides a tool for accomplishing certain instructional objectives in a creative and flexible way--a way very adaptable to the needs and problems of registered nurse students. It can extend the expertise of a nursing faculty into areas where such a resource was not previously available. But it is not a panacea! Nursing educators cannot simply ship off a computer based nursing course to the hinterlands and feel that their task is done. There is still a need on the part of students for face-to-face interaction with nursing faculty. This is necessary to accomplish the objective of resocializing the registered nurse into a nursing role that is different from that of a diploma or associate degree program graduate. There is still a need for competent and committed faculty to be responsible for courses in the field and for the students enrolled in those courses. Finally, [illegible] nursing education, there are always the questions: how does an extended program provide for adequately supervised laboratory experience in nursing, and how should this experience be integrated with the theoretical knowledge base presented in the computer based courses? In short, computer based instruction is a powerful tool, but like all powerful tools, it must be used appropriately!

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